

Beilstein Handbook of Organic Chemistry

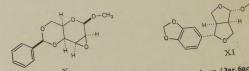
- UNIVERSITY PROVO, UTAH

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methylat in Methanol oder mit Kaliumcarbonat in wss. Methanol (Reber, Reichstein, riety. **28** [1940] 1164, 1173). Krystalle; F: 248-249° [korr.; Kofler-App.; aus CHCl₃ + Me.] (So., Re.), 242° [aus CHCl₃ + PAe.] (Wi.). $[\alpha]_{D}^{W}$: - 138,4° [CHCl₃; c = 0,6] (Wi.); $[\alpha]_{D}^{W}$: -142,5° [Py.; $= 0.41450 - R_{2}$)

c = 0,4] (So., Re.).



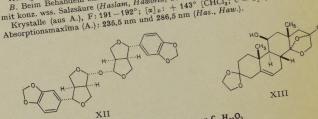
(3aR)-1c-Benzo[1,3]dioxol-5-yl-4c-benzo[1,3]dioxol-5-yloxy-(3ar,6ac)-tetrahydro-furo-Konstitution: Beroza, Am. Soc. 77 [1955] 3332. Konfiguration: Haslam, Soc. [C] Nonstitution: Beroza, Am. Soc. 11 [1995] 3332. Ronnguration: Hastam, Soc. [0] 1970 2332. Zusammenfassende Darstellung: Budowski, J. Am. Oil Chemists Soc. 41 [3,4-c]furan, Sesamolin C₂₀H₁₈O₇, Formel XI.

Isolerung aus Sesam-Ol: Beroza, Anal. Chem. 26 [1954] 1173, 1175; Haslam, Haworth, Soc. 1955 827; Carnnalm et al., Acta chem. scand. 9 [1955] 1111, 1116. We stall $F: 94-945^{\circ}$ [aus Me.] (Ca. et al.), 94° [aus CHCl₃ + 2,2,4-Trimethyl-theory (Record and the state of the Krystalie; F: 94–94,5° [aus Me.] (Ca. et al.), 94° [aus $\nabla rtcl_3 + 2,2,3^{-1}$ rtmethypentan] (Be., Anal. Chem. 26 1175), 93–94° [aus A.] (Has., Haw.). [a]_D³: + 212° [CHCl₃: [1964] 280.

Bis-[(3aR)-4c-benzo[1,3]dioxol-5-yl-(3ar,6ac)-tetrahydro-furo[3,4-c]furan-1c-yl]-äther,

Disaminyläther C₂₈H₂₈O₉, Formel XII.

B. Beim Behandeln einer Lösung von Sesamolin (s. o.) in Essigsäure mit Brom oder Krystalle (aus A.), F: 191–192°; $[a]_{0,c}$ + 143° [CHCl₃; c = 2] (Has., Haw.). UVmit konz. wss. Salzsäure (Hasiam, Haworth, Soc. 1955 827, 831).



Hydroxy-Verbindungen C22H32O5

rac-3,3-Åthandiyldioxy-14,175-epoxy-175-methyl-15-oxa-D-homo-145-androst-5-en- $11_{\beta=01}$, rac-(145,165)-3,3-Athandiyldioxy-14,15;14,16-diepoxy-16-methyl-14,15-seco-B. Beim Behandeln einer Lösung von rac-3,3-Åthandiyldioxy-11 β -hydroxy-16-methy androst-5-en-11β-ol C₂₂H₃₂O₅, Formel XIII + Spiegelbild. 2. Denn Denandent einer Losung von 742-35-Atmandiyuroxy-rip-nydroxy-te-neady 14,15-seco-androsta-5,15-dien-14-on in Benzol und Tetrahydrofuran mit Osmium(VII) oxid und Erwärmen einer Lösung des Reaktionsprodukts in Athanol mit wss. Natriu

sulfit-Lösung (Sarett et al., Am. Soc. 75 [1953] 2112, 2114).

Krystalle (aus A.); F: 207-208° [Kofler-App.].

Hydroxy-Verbindungen C23H34O5 3,3; 17,17-Bis-äthandiyldimercapto-androst-4-en-11*B*-ol C₂₃H₃₄OS₄, Formel I. B. Neben 3,3-Athandiyldimercapto-11 β -hydroxy-androst-4-en-17-on (Hauptprod)

14.5 4

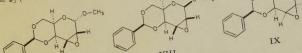
5774 Monohydroxy-Verbindungen $\rm C_nH_{2n-12}O_5$ mit vier Chalkogen-Ringatomen $\rm C_{13}-C_{23}$

B. Beim Erwärmen von Methyl-[04,06-((S)-benzyliden)-O²-(toluol-4-sulfonyl)-α-D galactopyranosid] (S. 4982) mit Natriunmethylat in Methanol (Sorkin, Reichstein, Helv. Jesudason, Owen, J.C.S. Perkin I 1974 2019, 2020. galactopyranosiu] (5, 4962) nin Natriummetarytar in auctuanor (Sornen, Reichstein, reichstein, 28 [1945] 1, 8) oder mit Kaliumcarbonat-Lösung in wss. Methanol (Maehly, Reichstein, Helv. 30 [1947] 496, 502). Beim Erwärmen einer Lösung von Methyl-[04,06.((S)-benze yliden)-0°,03-bis-(toluol-4-sulfonyl)-α-D-galactopyranosid] (S. 4988) in Benzol mit Nas

Rummethylat in Methanof (So., Re.). Krystalle (aus Me. + Ae.); F: 178–179° [korr.; Kofler-App.] (So., Re.), 174–175° Krystane (aus Me. + Ae.); F: 1/8 - 1/9 [korr.; Koner-App.] [So., Re.), 1/4 - 179[korr.] (Ma., Re.). Im Hochvakuum bei 160° sublimierbar (So., Re.). $[\alpha]_{p}^{\alpha}: -7, 4^{\circ}$ [CHCl₃:

triummethylat in Methanol (So., Re.).

c = 2] (So., Re.).



1) (4aR)-7c,8c-Epoxy-6t-methoxy-2t-phenyl-(4ar,8ac)-hexahydro-pyrano[3,2-d]= 1) $(4ax_{1})^{-rc_{0}} = 0^{-c_{0}} = 0^{-c_{0}} = 0^{-re_{0}} = 0^{-r$

Ormer VIII. Uber die Konfiguration s. Williams, Adv. Carbohydrate Chem. 25 [1970] 109, 136; Jesudason, Ouen, J.C.S. Perkin I 1974 2019, 2022; Guthrie, Liebmann, Carbohydrate B. Beim Erwärmen von Methyl- $[O^4, O^4-((S)-benzyliden)-O^4-(toluol-4-sulfonyl)-\beta-b-$ Formel VIII. B. Delm Erwarmen von Metnyl-[U*,U*-([5]-Denzymen]-U*-(romoi-4-sumonyl-B-D-galactopyranosid] (S. 4982) mit Natriummethylat in Methanol (Sorkin, Reichstein,

telv. 25 [1945] 1, 15]. Krystalle (aus Ae. + PAe.), F: 146-147° [korr.; Kofler-App.]; $[\alpha]_{5}^{\infty}$: -118,5° g) (4aR)-71,81-Epoxy-6c-methoxy-21-phenyl-(4ar,8ac)-hexahydro-pyrano[3,2-d]= Helv. 28 [1945] 1, 15).

[1,3] dioxin, Methyl-[O^4 , O^6 -((S)-benzyliden)-2,3-anhydro- α -D-talopyranosid] $C_{14}H_{10}O_{5}$, [CHCl₃; c = 1] (So., Re.). Ormet IA. Uber die Konfiguration S. Williams, Adv. Carbohydrate Chem. 25 [1970] 109, 137;

Jesudason, Owen, J.C.S. Perkin I 1974 2019, 2020; Gulhrie, Liebmann, Carbohydrate B. Beim Erwärmen von Methyl- $[O^4, O^4-((S)-benzyliden)-O^2-(toluol-4-sulfonyl)-\alpha-D-gals$ o, Dehn Erwarnien von mennyr 10-30-1031-benzynden - O-100001-4-500001 yr a organ actopyranosid] (S. 4980) (Sorkin, Reichstein, Helv. 28 [1945] 1, 9; Reber, Reichstein, Helv. 28 [1945] 1164, 1170; Buchanan, Soc. 1958 995, 1000) oder von Methyl-[O³.benzoyl-

26 [1939] 1104, 1110; Duchanan, 300, 1936 490, 1000] Ouer von Meethyr (0-Denkoyr O⁴, O⁶-((S)-benzyliden)-O²-(toluol-4-sulfonyl)-x-D-galactopyranosid] (S. 4986) (Gyr, Reich-Krystalle (aus CHCl₃ + Ae.), F: 241 – 242° [korr.; Kofler-App.] (So., Re.); F: 234° stein, Helv. 28 [1945] 226, 232) mit Natriummethylat in Methanol. Arystane (aus $CHCl_3 \neq Ae.$), $r: z \neq 1 - z \neq 2$ [KOIT.; Noner-App.] [30, Re.]; $r: za \neq 1$ bis 236° (Bu.). Bei 160° im Hochvakuum sublimierbar (So., Re.). $[x]_D^{\infty}: -39.6^\circ$ [CHCl₃;

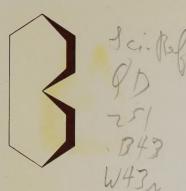
h) (4aR)-71,81-Epoxy-61-methoxy-21-phenyl-(4ar,8ac)-hexahydro-pyrano[3,2-d]= 1) $(4aK)^{-H}$, $6r = Dpoxy-or-metrioxy-2r-pinenyi-(4ar, 6ac)-nexanyoro-pyrano[3, <math>e^{-a}]^{-a}$ [1,3]dioxin, Methyl-[O^4 , O^6 -((S)-benzyliden)-2, 3-anhydro- β -D-talopyranosid] $C_{14}H_{10}O_6$, c = 1] (So., Re.). ormei A. Uber, die Konfiguration s. Williams, Adv. Carbohydrate Chem. 25 [1970] 109, 137;

Formel X.

Jesudason, Quen, J.C.S. Perkin I 1974 2019, 2022; Guthrie, Liebmann, Carbohydrate

es. 33 [1974] 300, 397. B. Beim Behandeln von Methyl-[2,3-anhydro-β-D-talopyranosid] mit Benzaldehyd Markeland (Weising Compared Fed. Berger Belger D. Denn Denanuem von metnyr-12,3-annyaro-p-D-tatopyranosuj nut Benzaruenya Zinkchlorid (Wiggins, Soc. 1944 522, 524). Beim Behandeln einer Lösung von Methylund Einsteinorid (*w* tggws, Soc. 1944 522, 528). Denn Benanden enter Losung von metnyr $[O, O^{\varepsilon}.(S)$ -benzyliden)- $O^{\varepsilon}.(toluol-4-sulfonyl)-\beta-D-galactopyranosid] (S. 4981) in Chloroform$

with Natriummethylat in Methanol ($W_{i,j}$). Neben anderen Verbindungen beim Erwärmen in die Verbindungen beim Krwärmen im Krief von Statistichen Geschlichten der Statistichen der Statistiche einer Lösung von Methyl- $[O^4O^8-((S)-benzyliden)-O^4,O^8-bis-(toluol-4-sulfonyl)-\beta-b-galacto$ pyranosid] (S. 4988) in Benzol mit Natriummethylat in Methanol (Sorkin, Reichstein, pyranosia] (5, 4968) in Benzol mit Natriummetnylat in Methalio (Soram, Reienstein, Helv. 28 [1945] 1, 14; s. a. Wi.). Beim Erwärmen von Methyl-[0³.athoxycarbonyl-Cl. (4) (Column 1, 1990) $O^4, O^4 - (10940]$ 1, 14; S. a. W.). Denn Erwarnen von Methyr- O^{-} atnoxycarbonyr- $O^4, O^4 - ((S)-benzyliden)-O^2 - (toluol-4-sulfonyl)-<math>\beta$ -D-galactopyranosid] (S. 4987) mit Natrium



What is Beilstein?

BEILSTEIN is the encyclopedia of chemical compounds containing the element carbon in their molecule. The work takes its name from Friedrich Konrad Beilstein who published the first edition in 1881/1883.

Today it is the organic chemist's standard work of reference, in daily use throughout the world. Without this library, now consisting of more than 240 volumes, chemical research would be deprived of one of its most valuable assets and would certainly become more costly and repetitive.

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At the present day it is estimated that more than five million carbon compounds are known. For each compound described in BEILSTEIN the following data are recorded: natural occurrence and isolation,

preparation and purification on research and industrial scale,

physical properties, chemical behaviour and reactions,

identification by derivatisation and analytical procedures,

special handling techniques where necessary. Each statement is precisely referenced.

Without the BEILSTEIN Handbook, organic chemical research in many fields would involve considerably more tedium and inconvenience. BEILSTEIN is without question one of the organic chemists most essential research tools.

What is the purpose of Beilstein?

The purpose of BEIL-STEIN is to provide the scientist interested in carbon compounds with an up-to-date, reliable and comprehensive survey of factual information and established results.

This extensive collection of concrete facts enables the chemist. physicist, biologist or technologist to prepare or identify a particular compound without repeating previous research, thus

saving time, effort and money.

The critical assessment and coherent ordering of factual information in **BEILSTEIN** has made an important contribution to modern organic chemical

practice, on the one hand helping the scientist avoid pitfalls, and on the other offering insight and stimulation for further research.

What is the value and significance of Beilstein?

The outstanding feature of the BEILSTEIN Handbook is that it provides a critical review of all material on carbon compounds published in journals, patents, monographs and important theses. **BEILSTEIN** is the only comprehensive work of its kind in the world, not only documenting the literature of organic chemistry but also evaluating and checking the published data. Insignificant, misleading or clearly erroneous results are discarded during the elaborate and thorough editing carried out at the BEIL-STEIN Institute in Frankfurt. More than 70 percent of the "raw" data from the

primary literature is rejected, either because the material is not new and is contained in previous volumes of the BEILSTEIN Handbook, or because there is nothing original about the reactions discussed. This clearly represents an enormous saving in time for the area to fthere LIBRARY Handbook BRIGHAM YOUNG UNIVERSITY PROVO, UTAH

BEILSTEIN offers excellent value for money. It is produced by a staff of highly qualified scientific specialists.

The BEILSTEIN Institute is a non profitmaking organization and overheads are kept to a minimum.



How is Beilstein organized?

The BEILSTEIN Handbook is divided into series (Basic Series and Supplementary Series) and volumes, covering the periods listed in the following table: The volumes of Supplementary Series III and IV covering the heterocyclic compounds (vols. 17–27) are combined in a joint issue (Supplementary Series III/IV). To keep pace with the rapid growth of the chemical literature BEILSTEIN is subjected to a continuous process of revision and extension to include new results, these fre-

Series	Number of part volumes	Period of literature completely covered	Colour- code on spine
Basic Series Supplementary Series I Supplementary Series II Supplementary Series III Supplementary Series III/IV (in progress) Supplementary Series IV (in progress) Supplementary Series V (forthcoming) * December 1981	27 17 31 62 66* 38*	up to 1909 1910–1919 1920–1929 1930–1949 1930–1959 1950–1959 1960–1979	green red white blue blue/black black

quently being of considerably later date than that indicated by the nominal closing date of the Series concerned.

Preparations have now been completed for Supplementary Series V, the first volumes of which are to be published shortly. This will cover the literature from 1960 through to 1979.

The Handbook has been published in unbroken tradition since 1918 by Springer-Verlag.

What is Beilstein's systematic arrange

Order and the logical arrangement of facts are basic to all sciences. In much the same way as Mendeleev's periodic classification of the elements imposed order on the whole field of chemistry, the BEILSTEIN System, devised by P. Jacobson and B. Prager in 1907, brought a logical and systematic ordering of the carbon compounds. The system is explained in detail with numerous examples on the first 46 pages of volume 1 of the Basic Series. A shortened version of these rules is outlined in a new guide, "How to use Beilstein", which provides concise instructions on how to extract the maximum amount of information from the Handbook with the minimum of effort. For those who are interested the guide is available free of charge from the publishers. There are three main divisions in the BEILSTEIN System: acyclic, isocyclic and heterocyclic carbon compounds. Each of these

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is subdivided into classes according to the functional features of the individual compounds.

The table included on the next two pages of this brochure gives a brief outline of the BEILSTEIN System. Digitized by the Internet Archive in 2022 with funding from Brigham Young University

https://archive.org/details/whatisbeilsteinb00unse

The Beilstein System

Identically numbered volumes of the Basic Series (Fourth Edition) and a Supplementary Series contain the same classes of compounds (system numbers). Where necessary, the nominal volumes of a Supplementary Series have been subdivided into several parts.

Functional Class Constructional Class Constructiona	Functional Cla	al Group	None	-OH	=0	<i>⊳</i> O ∖OH	-X00H,-X020H (X=S,Se,Te)	-NH ₂	-NHOH etc.	-PH ₂ etc.
Compounds System No 1-15 16-20-20 7-151 152-322 23-379 30-400 40-400 40-400 Barryee Methylene Discover Discover Discover Discover Discover Discover Bocyclic Will No S O O Picture Discover		SS	pounds without Functional Groups (Function= less Com=	Com-	Com- pounds (Simple Oxo Compounds, Hydroxy- Oxo Com=	(Carbox- ylic) Acids (Simple Acids, Hydroxy Acids, Oxo Acids, Hydroxy-	Chalcogen Oxoacids (Sulfinic Acids, Sulfinic Acids with additional Oxygen Func= tions, Sulfonic Acids, Sulfonic Acids with additional pre= ceding Func= tional Groups, Selenic Acids,	(Simple Amines, Hydroxy Amines, Oxo Amines, Hydroxy-Oxo Amines, Amino Acids, Amino Acids, Amino Acids with additional Hydroxy Groups or/and Oxo Groups, Aminosulfinic	pounds with further Nitrogen Functional Groups	pounds with other Functiona
System Pictual (Marc)	Acyclic Compounds				-		-			-
Incorpolle Compound Parlow Mo Val. No. Solution Solution Model Parlow Mo Solution Model Parlow Mo	compounds									
Compounds System No. 60-400 60-400 60-400 60-400 60-400 50-400		Examples	Ethylene,	Glycerol,	hyde,		sulfinic acid, Sulfoacetic	diamine, Glutamic	hydrazine, Azo=	phosphinic acid, Tetraethyl
Syllem No 490-980 (00-980) 991-1504 1502-1925 15	Isocyclic Compounds	Vol. No.	5	6	7, 8	9, 10	11	12, 13, 14	15, 16	16
Compound With Marganes Protection Protection Autority Protection Pr		The second se		499-608		891-1504				2252-2358
with Ring Atom System No. 2339-2377 2378-2456 2457-2569 2570-2622 2827-2838 2639-2650 2651-2664 2655- 2657-2664 Compounds With Ring Atom Vol. No. 269 10 10		Examples	hexane, Phenan=	Phloro=	hyde, Anthra=	acid, Mandelic	lenedisul= fonic acid, Benzene= selenonic	Phenyl=	hydroxyl= amine, Benzene= diazonium	arsine,
1 Chalcogen Ring Atom System No. 2499-2477 2472-2589 2570-2828 2827-2583 2687-2683 2681-2684 2685-2684 2680-22949 290-2939 280-2949 2900 1 Compounds Vol. No. 20 21 <	Compounds	Vol. No.	17	17	17, 18	18	18	18	18	18
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compounds with min thing Atomlowlowlowlowlowlowlow2 Compounds with min <b< td=""><td>Ring Atom</td><td>Examples</td><td></td><td>Xanthydrol</td><td>Maleic</td><td></td><td></td><td></td><td></td><td></td></b<>	Ring Atom	Examples		Xanthydrol	Maleic					
With Ring Atom System No. 2666-2688 2699-2735 2736-2643 2844-2904 2905-2906 2907-2939 2940-2949 2950 Ring Atom Docamu O. Senz Ploronal Circlaide and and and anotal state Totalenze state Sinter No. Reffyeen state Reffyeen state Reffyeen state Sinter No. Reffyeen state Sinter No.	Company		10	10	anhydride	lactone				tin
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Compounds With I Nitrogen Ring Atom Vol. No. 20 21 21 22 23 24 24 24 24 24 24 24 25 </td <td>2 Chalcogen Ring Atoms</td> <td></td> <td>Dioxane,</td> <td>O, O'-Benz= ylidene=</td> <td></td> <td>Glycidic</td> <td>1,3-Benzo= dioxine= sulfonic</td> <td>Aminoiso=</td> <td>Bis(phenyl= triazeno)=</td> <td>(Methylene= dioxy)=</td>	2 Chalcogen Ring Atoms		Dioxane,	O, O'-Benz= ylidene=		Glycidic	1,3-Benzo= dioxine= sulfonic	Aminoiso=	Bis(phenyl= triazeno)=	(Methylene= dioxy)=
with Ring Atom System No. 3032-3102 3103-3176 3177-3241 3242-3375 3376-3387 3388-3445 3446-3455 3457 Ring Atom Examples Pyridine Atropine Isatine Pyridine Pyridine Typtamin Azarsystem Dipyriding Compounds Vol. No. 23 23 24, 25 25	:			:	:	:	:	:	:	:
Nitrogen Ring Atom System No 3032-3102 3103-3176 3177-3241 32376-3378 3376-3378 3388-3445 3463-3456 3457 Compounds With Ring Atoms 2 3										
Compounds with 2 Nirogen Ring Atoms Vol. No. 23 23 24, 25 27 27	1 Nitrogen	-				2	Pyridine= sulfonic		Azoxy=	Dipyridyl
With Ring Atoms System No. 3458-3501 3502-3564 3659-3638 3639-3706 3708-3707	Compounds	Vol. No.	23	23	24, 25	25		25	25	25
Ring Atoms Examples Pyrazolite phosphorus Cinchonine acid Indigo Diaturic acid Phonylazore acid Histidine phosphorus Histidine Histidine Histid	with	System No.	3458-3501	3502-3554						
with Ring Atoms System No. 3794-3824 3825-3866 3869-3994 3937-3946 3948-3966 3997-4007 4008 Ring Atoms Examples Triazile Triazile Triazile Triazile Barzoe	Ring Atoms	Examples	Pyrazoline	Cinchonine	Indigo		sulfonic	Histidine		phosphonic
S Nitrogen Ring Atoms System No. 3794-3824 3825-3886 3897-3946 3947 Main 2 (3917) Main 2 (3917) Main 2 (3917) Main 2 (3017) Main 2 (30	Compounds				26	26	26	26	26	26
i i	3 Nitrogen Ring Atoms	Stationary and an other state		Triquinolyl=	Cyanuric	Triazole= carboxylic	Naphtho= triazole= sulfonic	Amino= benzo=	Benzo= triazole= diazonium	Benzo= triazolyl= arsonic
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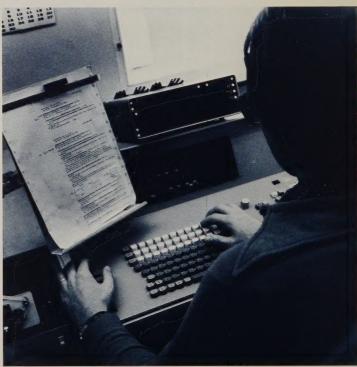
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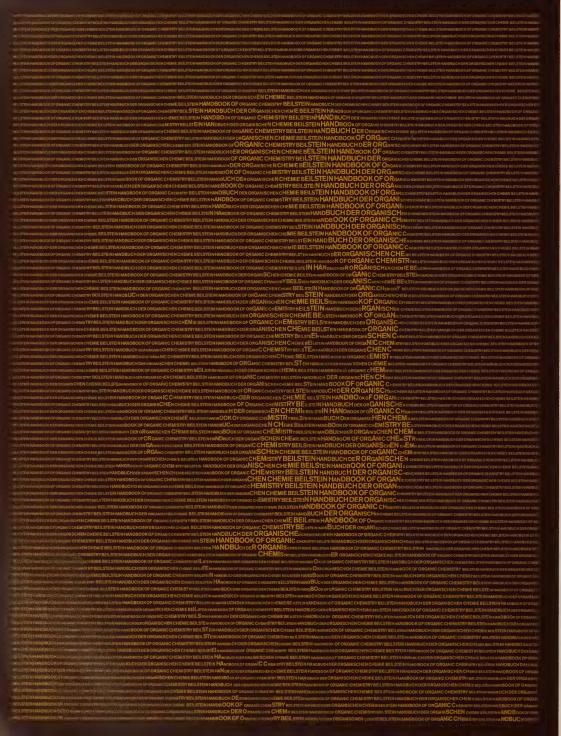
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F Beilstein

What is Beilstein's history?

"In this work I have tried to collect, as clearly as possible, all fully analysed organic chemical compounds", Friedrich Konrad Beilstein wrote as the opening sentence to his preface of the first edition. For over 100 years now, this has remained the guiding aim and object of all engaged in this ambitious project.

F. K. Beilstein was born in St. Petersburg, now Leningrad, in 1838 of German parents. He studied chemistry in Heidelberg and Munich, and worked under Wöhler in Göttingen, where he became Professor of Organic Chemistry at the age of 27. A year later, in 1866, he was recalled to St. Petersburg to succeed Mendeleev. Here he planned the publication of a Handbook of Organic Chemistry and dedicated himself to this work until his death in 1906.

The first edition of his Handbook was a tremendous success. It appeared in 1881/1883 after fifteen years of hard work and consisted of two volumes covering 15,000 carbon compounds. The entire edition was quickly sold out, so that a second, expanded edition of three volumes was called for and appeared between 1885 and 1889.

Even at that time it was no mean task to evaluate the whole of the literature of organic chemistry, yet F. K. Beilstein was able to compile the Third Edition practically single-handed. This edition ran to four volumes.

Beilstein himself recognized that the work of continuing the Handbook could not be carried on by a single person. At the beginning of the century it fell first to P. Jacobson. then secretary of the German Chemical Society, and B. Prager to continue in Berlin what Beilstein had begun in Russia. They started the Fourth Edition (Basic Series). In 1933, E Richter took over the editorship, followed by Hans-G. Boit, who was publisher of the Handbook and director of the BEIL-STEIN Institute in Frankfurt/Main from 1961 until March 31st, 1978. From April 1st, 1978 Reiner Luckenbach has been director of the Institute.

The BEILSTEIN Institute for the Literature of Organic Chemistry, to give it its full title, was called into existence as a foundation in 1951, and six years later, the Carl Bosch House was given over to the Institute by the City of Frankfurt.

This Institute, together with the publisher, Springer-Verlag Berlin Heidelberg · New York, render a unique service to the world community of chemists in producing the BEILSTEIN Handbook of Organic Chemistry.



For further information on the BEILSTEIN Handbook the following material is available free of charge from your bookseller or from the publishers:

"How to use Beilstein", an informative guide with concisely formulated user-instructions, obtainable in English, German or Japanese.

"The Short Cut" (Poster showing a schematic procedure for locating compounds in the BEILSTEIN Handbook).

"BEILSTEIN Dictionary" (German/English).

"BEILSTEIN Reference Chart" (see picture on page 5). Size of the poster 140 x 100 cm. (Also obtainable in brochure form.)

"BEILSTEIN Outline", containing details of all currently available volumes of the Handbook.

Typographical portrait of Friedrich Konrad Beilstein (see picture on page 12). Size of the poster 51 x 81,5 cm.



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